

JEROME P. McHUGH AND ASSOCIATES

IBLA 87-533, 87-534

Decided March 21, 1990

Consolidated appeals from decisions of the New Mexico State Office, Bureau of Land Management, affirming, as modified, Albuquerque District Manager's findings that drainage requiring payment of compensatory royalty had occurred from Indian oil and gas leases NOO-C-14-20-3022 and NOO-C-14-20-3023.

Affirmed in part; set aside and remanded in part.

1. Oil and Gas Leases: Compensatory Royalty--Oil and Gas Leases: Drainage

Decisions requiring payment of compensatory royalty for drainage from Indian oil and gas leases are affirmed on appeal where no error is shown to exist in parameters used to calculate drainage from a well on an adjacent lease.

2. Oil and Gas Leases: Compensatory Royalty--Oil and Gas Leases: Drainage

Decisions requiring an Indian oil and gas lessee to pay compensatory royalty for drainage resulting from an adjacent well on another Federal lease are ordered set aside where royalty was assessed from the effective date of lease issuance rather than from a reasonable time following lease issuance within which a prudent operator would drill a protective well under all relevant circumstances.

3. Oil and Gas Leases: Compensatory Royalty--Oil and Gas Leases: Drainage

A Federal oil and gas lessee alleged to be draining Indian land who subsequently leased that same Indian land had no obligation to drill a protective well prior to issuance of the Indian leases.

APPEARANCES: Gary J. Johnson for appellant; Margaret C. Miller, Esq., Office of the Field Solicitor, Santa Fe, New Mexico, for the Bureau of Land Management.

## OPINION BY ADMINISTRATIVE JUDGE ARNESS

Jerome P. McHugh & Associates (McHugh) appeals from two May 8, 1987, decisions (decisions) of the Deputy State Director, New Mexico State Office, Bureau of Land Management (BLM), affirming findings by the Albuquerque District Manager made February 26, 1987, that drainage requiring payment of compensatory royalty had occurred from lands within Navajo Indian oil and gas leases NOO-C-14-20-3022 and NOO-C-14-20-3023. McHugh is the record title lessee of both Indian oil and gas leases. BLM found that the lands within Navajo Indian oil and gas lease NOO-C-14-20-3022, the NE $\frac{1}{4}$  sec. 23, T. 26 N., R. 11 W., San Juan County, New Mexico, and NOO-C-14-20-3023, the SE $\frac{1}{4}$  sec. 23, T. 26 N., R. 11 W., had been drained by the Davis Federal No. 1 well (Davis Well) situated in NW $\frac{1}{4}$  SW $\frac{1}{4}$  sec. 24, T. 26 N., R. 11 W., San Juan County, New Mexico, also leased to McHugh. Because identical issues are presented by these appeals, IBLA 87-533 and 87-534 are consolidated for decision.

On July 10, 1985, BLM notified McHugh that these Indian leases were "subject to possible drainage by the Davis Federal No. 1 in the NW $\frac{1}{4}$  SW $\frac{1}{4}$  section 24, T. 26 N., R. 11 W., NMPM" (BLM letters to McHugh dated July 10, 1985, at 1). McHugh, BLM stated, "would be expected to drill a protective well unless [McHugh] can demonstrate that geologic conditions at depth preclude drainage of any oil and/or gas from beneath the lease." Id. BLM indicated that McHugh would "be assessed compensatory royalty from the date of first production from the offending well until the protective well commences production or until the offending well ceases production, whichever first occurs, unless [McHugh could] demonstrate that no drainage has occurred." Id.

On April 14, 1986, McHugh replied that no drainage of the Gallup formation at this location had taken place. Further, McHugh denied that drilling a new well was economically justifiable because current natural gas prices would not allow a reasonable return on such an investment. Nonetheless, McHugh concluded the Indian leases could be protected by completion in the Gallup formation of the Nassau No. 3E well, an existing well on the Federal Indian acreage leased by McHugh. McHugh explained that the Nassau No. 3E was currently completed and productive in the Dakota formation, and that completion of the well in the Gallup formation would need to be commingled with Dakota production. McHugh indicated the Nassau No. 3E well would be completed in the Gallup formation if approval for commingling production was obtained from the New Mexico Oil Conservation Department. BLM responded to this proposal on April 24, 1986, stating that the potentially offending well was being evaluated for possible compensatory royalty assessment until production from the planned protective well should begin.

On May 19, 1986, BLM determined that drainage was occurring from the Davis Well. By letter to McHugh on that date, BLM stated that "[c]ompensatory royalty will not be assessed if you can demonstrate to our satisfaction that there has never been a point in time between the onset of production from the offending well until the present at which it would have been possible to have drilled an economic well."

On May 23, 1986, McHugh requested the data BLM had used to make the drainage determination announced on May 19, 1986, including examples of calculations leading to the stated conclusion and pressure data, net pay and drainage radius calculations, permeability data, and porosity data. BLM declined to furnish the requested data, but described the general procedure used to make drainage determinations, stating:

The production history of the offending well, the Davis Federal No. 1 (NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 24, T. 26 N., R. 11 W.), was used to complete a decline curve analysis. Most of the reservoir parameters were obtained by well log analyses of the offending well and other surrounding wells. All available information (well files, geologic guidebooks, etc.) was checked to obtain the most accurate information possible.

In order to determine a drainage radius, ultimate reserve figures were entered into the volumetric equation. After a radius was calculated, the appropriate sized circle was drawn around the offending well. The percentage of the circle over-lapping the Indian lease(s) becomes the drainage factor.

Minerals Management Service (MMS) then uses the drainage factor to assess compensatory royalty. The drainage factor is multiplied by the total production of the offending well, the royalty rate of the Indian lease, and the product value to determine the compensatory royalty to be assessed.

(BLM letters to McHugh dated June 25, 1986, at 1).

On October 29, 1986, McHugh submitted an analysis of production and reservoir data for the offending well and concluded that no drainage was taking place. This determination, McHugh explained, was made using available log, pressure, and production data from the Davis Well and log data available from the Nassau Nos. 3 and 3E wells then completed on the Indian leases in the Basin Dakota reservoir in sec. 23. McHugh calculated cumulative production from the Gallup formation of the Davis Well at 1,891,912 MCF (thousand cubic feet), assuming net pay between 56 and 198 feet, an initial and current bottomhole temperature of 118° F., an initial and current bottomhole pressure of 1658 PSIA (pounds per square inch absolute) and 306 PSIA respectively, initial and current gas compressibility factor of 0.785 and 0.945 respectively, and water saturation of 0.25 based on Davis Well logs showing a water saturation in the range of 0.23 to 0.25. Although there were no porosity figures on the Davis Well, McHugh calculated the porosity for the Davis Well at 9 percent relying on available data from the Nassau Nos. 3 and 3E wells. McHugh assumed a gas gravity of 0.7 using data from other unnamed wells in the area, and calculated ultimate reserves for the Davis Well at 2,234,484 MCF. A drainage radius of between 642 and 1,207 feet was determined for a drainage area of 30 to 105 acres.

As to lease NOO-C-14-20-3023 (the SE¼ sec. 23), BLM responded to McHugh on January 13, 1987, stating:

[W]e agree that it is very unlikely that a protective well would be economically feasible at the present time. Therefore, we will not require the drilling of a protective well on the lease. However, you have not demonstrated that a well drilled between June 1963 and December 1985 would have been uneconomical. We have determined that drainage of the Navajo lease NOO-C-14-20-3023 has occurred and continues to occur.

The lease terms and oil and gas operating regulations require that compensatory royalty be paid for all drainage, except when the operator demonstrates to our satisfaction that subsurface geologic conditions preclude drainage or when the operator can demonstrate to our satisfaction that there has never been a point in time between the onset of production from the offending well until the present at which it would have been possible to have drilled a protective well.

Compensatory royalty will be effective December 1, 1963 (six months from the date of first production of the offending well), and will continue until the date of last production from the offending well or the effective date of the relinquishment of the affected portions of lease NOO-C-14-20-3023, whichever occurs first.

The portion of the offending well's production attributed to Navajo lease NOO-C-14-20-3023 has been determined to be 19.35 percent, based on reserves drained from 253.82 acres of which 49.12 acres are in lease NOO-C-14-20-3023.

BLM issued an identical decision for Navajo lease NOO-C-14-20-3022 (the NE¼ sec. 23) on January 13, 1987, except for the finding that "the portion of appellant's offending well production attributed to the Navajo lease has been determined to be 4.65 percent based on reserves drained from 253.82 acres of which 11.81 acres are in lease NOO-C-14-20-3022."

McHugh sought technical and procedural review of these determinations on January 21, 1987, disputing BLM's conclusions, calculations, and finding that compensatory royalty, if owed, was due from the date stated. McHugh again requested production of the calculations used to determine the percentage of drainage attributed to McHugh's offending lease.

BLM then rescinded the January 13, 1987, decision and requested the data used by McHugh. On February 18, 1987, McHugh provided revised data and calculations, stating, among other matters, that

[t]he calculated water saturation numbers correlate with those used by logging companies for Gallup reservoirs which produce water free natural gas. The Davis Federal well does not produce water. It is an accepted industry criterion that water free

production comes from Gallup zones with water saturations below 30 percent. Gallup zones with water saturations above 30 usually produce some water.

McHugh also revised the estimate of the acreage drained by the Davis Well, stating:

Calculations based on the values of reservoir properties determined in the above analysis indicate that the drainage from the Davis Federal No. 1 well is in the range of 107 to 183 acres. These calculations indicate that drainage from the Davis Federal No. 1 cannot be expected to ever exceed 216 acres. Since the spacing in the Gallup formation is 320 acres, no drainage of offset acreage is occurring or will ever reasonably be expected to occur.

Using the new data, McHugh calculated water saturation at 0.274 to 0.374 rather than 0.25. McHugh's new porosity figure ranged from 6 to 12 percent based on data from the Nassau Nos. 3 and 3E wells, contrasted to the earlier figure of 9 percent.

Thereafter, on February 26, 1987, for Indian lease NOO-C-14-20-3022, BLM found compensatory royalty should be paid effective January 19, 1971, the date of lease issuance, instead of December 1, 1963. BLM reiterated that a protective well would not be economically feasible after December 1985. BLM stated, however, that appellant had not demonstrated that a protective well drilled between January 1971 and December 1985 would have been uneconomical and repeated that "the portion of the offending well's production attributed to Navajo lease NOO-C-14-20-3022 has been determined to be 4.65 percent, based on reserves drained from 253.82 acres of which 11.81 are in lease NOO-C-14-20-3022."

BLM's February 26 decision for lease NOO-C-14-20-3023 was identical to that issued for NOO-C-14-20-3022 except for the finding concerning amount of drainage which was "determined to be 19.35 percent, based on reserves drained from 253.82 acres of which 49.12 acres are in lease NOO-C-14-20-3023."

McHugh asked for technical and procedural review on March 30, 1987, stating that "[d]ata and calculations supporting our position that no drainage has taken place have been submitted to you by letter of February 18, 1987." On review, the Deputy State Director upheld the District Manager's decision but modified the finding concerning drainage on account of an error in the calculation of the reservoir temperature. The Deputy State Director concluded that the District Manager's figure of "233° F. should instead be 133° F." Concurring with all other engineering and geological data used by the District Manager, BLM enclosed a data sheet detailing the engineering and geologic data used to calculate the drainage factor attributable to the Davis Well and indicated that production from the offending well attributed to Indian lease NOO-C-14-20-3023 was recalculated to be 18 percent, assuming petroleum reserves were drained from 216.80 acres of which 39.9 acres were in lease NOO-C-14-20-3023

(NOO-C-14-20-3023 Decision at 1). <sup>1/</sup> BLM also determined that production from the offending Davis Well would drain 4 percent of available reserves from lease NOO-C-14-20-3022 (NOO-C-14-20-3022 Decision at 1).

Both decisions under review stated:

Our current drainage policy states that compensatory royalty will not be assessed if the lessee can demonstrate to the BLM's satisfaction that there has never been a point in time between the onset of production from the offending well until the present that a prudent operator could drill an economic protective well. This policy was clearly stated in the District Manager's letter of June 25, 1986. Your failure to submit evidence in support of this contention results in our finding that a prudent operator would drill the protective well.

\* \* \* \* \*

In regards to the effective date of compensatory royalty, current BLM policy states that compensatory royalty will be assessed from the date of first production from the offending well or from the date a prudent operator should have known of the offending well, whichever is later. The District Manager's decision to assess compensatory royalty effective on the date of lease issuance (January 19, 1971) is in accordance with this policy.

(Deputy State Director's Decisions at 1-2).

On appeal, McHugh disputes BLM's values for resource thickness, water saturation, porosity, and pressure. Variation in any of these values, McHugh urges, could significantly change the calculated drainage radius used to determine drainage. McHugh maintains that BLM's drainage determination is not supported by pressure data:

All calculations are made from assumptions applied to idealized equations. This lease has a well completed in a deeper formation. To prove or deny drainage, a pressure test was taken from the formation in which the offending well is completed.

---

<sup>1/</sup> The Deputy State Director's opinions identified the following values used in calculating drainage: recoverable gas reserves - 1,913,343 MCF; gas recovery factor - 0.85; reservoir temperature - 133° F.; porosity - 0.09; net-pay - 36 feet; water saturation - 0.36; static bottomhole pressure (BHP) - 1658 PSIA; gas deviation factor (Z) - 0.860 RCF/SCF; BHP/Z - 1928 PSIA; total drainage volume - 7806.3 acre-feet; drainage circle radius - 1734 feet; drainage circle area - 216.8 acres; area of lease being drained - 7.9 for lease NOO-C-14-20-3022 and 39.9 for lease NOO-C-14-20-3023; drainage factor - 0.04 for lease NOO-C-14-20-3022 and 0.18 for lease NOO-C-14-20-3023.

Pressure data taken from this lease in the formation in which the offending well is completed indicates that the lease is at a higher pressure than the offending well. While this data is as yet incomplete, it indicates also that the formation beneath this lease is much less productive than the same formation in the offending well.

(Statement of Reasons at 1, 2).

BLM responds that appellant has offered no reasons or data to support its arguments. BLM avers that the net-pay thickness, water saturation, and porosity values for the offending well were calculated by two BLM geologists, in the original geologic report and in the geologic review of the original report, and that reservoir parameters calculated in the report are analogous to values reported in Dunn, Steven S., 1978, "Gallegos Gallup Oil Field" in "Oil and Gas Fields of the Four Corners Area": Four Corners Geological Society ("Four Corners") at 317-19 (BLM Answer at 3). Included with BLM's answer is a copy of a table comparing values used by McHugh, BLM's geologists, and Four Corners. In answering, BLM observes that the parameter that shows the largest discrepancy and would have the most impact on the drainage radius calculation is the feet of net-pay. *Id.* BLM geologists calculated the net-pay of the Davis Well at 36 and 38 feet respectively. Four Corners calculated net-pay at 10 feet; and McHugh initially found the net-pay zone to be 56 to 198 feet, later revised to between 42 and 198 feet. BLM states that an attempt to reconcile the net-pay value discrepancy was made in a conversation with G. Johnson of McHugh.

According to BLM's geologic review, McHugh had cores of representative wells near the offending Davis Well which indicated a larger net-pay zone (Answer at 1-2). Nonetheless, according to BLM, McHugh refused to submit that data. Examination of the completion report for the offending well, BLM contends, "shows a Gallup perforated interval of 36 feet (5446-5482 ft.) and that only the 36 foot perforated zone was fractured. There is no other evidence that other Gallup wells are producing or are in communication with the 36 foot perforated zone" (Answer at 2).

[1] An appellant bears the burden of demonstrating error in BLM's decision by a preponderance of the evidence. In challenging the validity of drainage factors used by BLM to assess compensatory royalty, we find that McHugh has successfully carried this burden. McHugh failed to substantiate the key allegation made, that the net-pay factor employed by BLM to calculate drainage from the Indian leases in sec. 23 by the Davis Well in sec. 24 was in error. Notwithstanding BLM assurances that the McHugh data would remain confidential, McHugh refused to produce core data supporting its contention concerning net-pay thickness. Without relevant core data to show the existence of a greater net-pay value, the net-pay values found by BLM are accepted, as they are the only values shown by the record before us.

Nor has McHugh supplemented the record with pressure data supporting its averment that BLM's pressure data were erroneous. Rather than demonstrating error, McHugh's revised porosity figures support the pressure value

used by BLM. Significantly, McHugh ultimately adopted a porosity range of 6 to 12 percent in its revision of February 1987, a factor which encompassed the 9-percent value used by BLM.

Further, in calculations tending to show reduced drainage by the Davis Well, McHugh used a water-saturation parameter of between 0.274 - 0.374. BLM employed a water-saturation figure of 36 percent in its original report. The Four Corners Society reported a water saturation factor of 41 percent. Although BLM later revised the 36-percent figure to 45 percent, McHugh has not shown why BLM's choice of 45 percent is in error. McHugh's revised data assumed that water saturation was below 30 percent because that figure seemed related to observed figures for Gallup reservoirs which produce water-free natural gas, as does the Davis Well. Nonetheless, McHugh also urged that it is "an accepted industry criterion that water free production comes from Gallup zones with water saturations below 30 percent. Gallup zones with water saturations above 30 usually produce some water" (Feb. 18, 1987, McHugh Letter to BLM at 2). Thus, McHugh's revised estimate of water saturation at between 0.274 - 0.374 is inconsistent with the alleged industry criterion cited previously.

[2] The regulations governing payment of compensatory royalty for drainage from Federal oil and gas leases provide pertinentlly:

Where lands in any leases are being drained of their oil and gas content by wells either on a Federal lease issued at a lower rate of royalty or on non-Federal lands, the lessee shall both drill and produce all wells necessary to protect the leased lands from drainage. In lieu of drilling necessary wells, the lessee may, with the consent of the authorized officer, pay compensatory royalty in the amount determined in accordance with 3162.2(a) of this title.

43 CFR 3100.2-2.

The operating rights owner shall drill diligently and produce continuously from such wells as are necessary to protect the [Federal] lessor from loss of royalty by reason of drainage. The authorized officer may assess compensatory royalty under which the lessee will pay a sum determined as adequate to compensate the lessor for the lessee's failure to drill and produce wells required to protect the lessor from loss through drainage by wells on adjacent lands.

43 CFR 3162.2(a).

That McHugh may be precluded from drilling an offset well on the two Indian leases by state well-spacing regulations does not necessarily mean the Indian leases are not being drained by the Davis Well. The quoted regulations make no mention of state well-spacing regulations, nor does the fact that McHugh cannot drill an offset well in conformity to state well-spacing regulations relieve him of the obligation of paying compensatory royalty.

To the contrary, the regulatory language is in the alternative. 43 CFR 3100.2-2 provides that a lessee shall drill and produce all wells necessary to protect leased lands from drainage or pay compensatory royalty. Where it is not possible to drill an offset well, an offending Federal lessee may not be relieved from payment of compensatory royalty simply because of that circumstance. Nola Grace Ptasynski, 63 IBLA 240, 255, 89 I.D. 208, 212 (1982). <sup>2/</sup> When a promisor can perform a contract in either one of two alternative ways, the impracticability or impossibility of one alternative does not excuse the promisor if performance by means of the other alternative is still practicable or possible. Id. Nor has McHugh shown that it was precluded by impossibility from drilling an offset well, since the record does not reveal that appellant sought and was denied an exception to the New Mexico spacing regulations for that purpose. Id.

Nonetheless, BLM's attempt to assess compensatory royalty "from the date of first production from the offending well or from the date a prudent operator should have known of the offending well, whichever is later," in this case determined to be January 19, 1971, was incorrect. See Nola Grace Ptasynski, *supra*. In Nola Grace Ptasynski, we found that the obligation to protect a leasehold from drainage by drilling an offset well or paying compensatory royalty arises not upon completion of the draining well, but only after the passage of a reasonable time subsequent to notification to the Federal lessee that an adjoining well is draining the leasehold.

Nola Grace Ptasynski did not deal with the situation where the Federal lessee holds both the drained and draining leases. That situation was considered in Atlantic Richfield Co., 105 IBLA 218, 95 I.D. 235 (1988), Atlantic Richfield Co. (On Reconsideration), 110 IBLA 200, 96 I.D. 363 (1989), and Cordillera Corp., 111 IBLA 61 (1989). The Atlantic Richfield Co. decision dealt with a drainage situation involving a common lessee, and the rules set forth therein, as here modified, control the disposition of these appeals. Addressing the notion that liability for compensatory royalties accrues upon the passage of a reasonable time following notice to the lessee that drainage is occurring, we stated in Atlantic Richfield Co.

In a common lessee context, the lessee who drills the offending well is in the best position to know that drainage is occurring. In such context we find no reason for requiring BLM to assume the initial burden of going forward with evidence that the common lessee knew or that a reasonably prudent operator should have known that drainage was occurring. \* \* \* The common lessee shall be presumed to have knowledge of the drainage upon first production from its offending well. However, this presumption is

---

<sup>2/</sup> In Nola Grace Ptasynski, we rejected the argument that there was no breach of the drainage protection covenant and thus no obligation to pay compensatory royalty where appellant could not, consistent with state spacing requirements, drill an offset well on her lease. We affirmed the obligation to pay compensatory royalty as an alternative to drilling an offset well.

rebuttable by the common lessee, who bears the ultimate burden of persuasion as to notice of drainage.  
[Citation omitted.]

Id. at 226.

Nonetheless, the common lessee's obligation to drill an offset well or pay compensatory royalty does not coincide with the date of first production from the offending well of which he is presumed to have knowledge. To impose an obligation to pay compensatory royalty from the date of first production from the offending well is tantamount to requiring the lessee to commence drilling an offset well at the time the offending well is drilled. Id. at 228. Should anticipatory drilling, we held in Atlantic Richfield Co., is contrary to sound business judgment and would prove wasteful in many cases. Consistent with Ptasynski, we held that the obligation to pay compensatory royalty commences only when the lessee fails to offset an offending well within a reasonable time after notice of drainage. Therefore, BLM's finding that "compensatory royalty will be assessed from the date of first production from the offending well or from the date a prudent operator should have known of the offending well, whichever is later" was incorrect.

[3] The rule that the common lessee's notice of drainage is presumed at the time of first production of the offending well requires modification in the instant cases, since the Indian leases embracing the subject acreage were not in existence when first production occurred from the Davis Well. First production by the offending well from the Gallup formation occurred in June 1963 (see BLM's Engineering Analysis dated May 7, 1986, at 1). McHugh's Indian leases were not effective until January 19, 1971. Until the Indian leases came into existence McHugh had no contractual obligation to protect them against drainage of their reserves.

In this case we, therefore, find that McHugh, the common lessee of the drained and draining leases, had no obligation to drill an offset well or pay compensatory royalty until drainage was occurring on January 19, 1971, the effective date of lease issuance. Consequently, McHugh's obligation to drill an offset well or pay compensatory royalty accrued a reasonable time after the effective date of lease issuance, because liability for compensatory royalty or the obligation to drill an offset well is established when a reasonably prudent operator could drill in light of geological and engineering conditions and applicable regulatory requirements. Atlantic Richfield Co. *supra* at 228. As we stated in Atlantic Richfield Co.:

The time it would take to complete a well is dependent upon a number of factors such as the depth of the well, the ability to obtain necessary permits, and the availability of equipment. For example, if an environmental impact statement were required prior to the issuance of a permit to drill a deep well, to commence compensatory royalties 6 months after completion of the offending well might be very unreasonable. Thus, the determination of what is a reasonable time must be made on a case-by-case basis.

105 IBLA at 228 n.5, 95 I.D. at 241 n.5.

In sum, we affirm BLM's findings establishing relevant drainage factors, but set aside BLM's decision that compensatory royalty began to accrue when the Indian leases were issued on January 19, 1971. On remand BLM should determine what would have been a reasonable time from lease issuance for completion of an offset well. BLM should then determine the amount of compensatory royalty owed.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. 4.1, the decisions appealed from are affirmed in part, and set aside and remanded in part for further action consistent with this decision.

---

Franklin D. Arness  
Administrative Judge

I concur:

---

Gail M. Frazier  
Administrative Judge